DEATHS DUE TO DRUGS & POISONS: 2002

In 2002, there were 216 deaths due to drugs and poisons (excluding 17 deaths due to carbon monoxide). This comprised approximately 12.8% of all deaths investigated (216/1683). The total number of drug caused deaths has increased compared to 2001 figures when there were 165 drug deaths. Deaths due to drugs and poisons comprised 30% (216/725) of all suicides, accidents, and undetermined deaths combined.

Of the drug/poison deaths in 2002, 29% (62/216) were due to a single drug or poison, and 71% (154/216) were the result of drugs or poisons in combination. The year 2002 continued the trend of the majority of drug deaths being the result of multiple drug intoxication (65% in 2002, 65% in 2001, 66% in 2000, 66% in 1999, and 67% in 1998). Table 9-3 displays the specific drugs that caused death in 2002. Because of their prevalence, ethanol, cocaine (a stimulant), and opiates (narcotic) are identified as separate drug categories.

The manners of "accident", "suicide", and "undetermined" are represented in the deaths due to drugs and poisons. In 2002, as in the past three years, there were no homicidal deaths in which drugs or poisons were the primary cause of the death, although the victim may have been under the influence of drugs at the time of the fatal incident.

The classification of undetermined manner is used when the circumstances surrounding the drug death does not allow clarification of whether the fatal intoxication was intentional, unintentional ("recreational"), or involved another person's actions. In the year 2002 there were 20 deaths of undetermined manner attributed to drugs and poisons compared to 21 in 2001, 28 in 2000, 11 in 1999, 28 in 1998.

In 2002 there were 23 suicides attributed to drugs/poisons as compared to 20 in 2001, 29 in 2000, 35 in 1999, and 27 in 1998.

There were 173 accidental overdoses of drugs/poisons in 2002 compared to 124 in 2001, 177 in 2000, 164 in 1999, and 179 in 1998. In 2002, accidental drug deaths comprised 37% (173/472) of all accident deaths.

In 2002, 58% (126/216) of all deaths due to drugs and poisons involved cocaine or opiates[1], either alone or in combination. This compares with 50% (82/165) in 2001, 62% (146/234) in 2000, 70% (148/210) in 1999, and 71% (165/234) in 1998. Opiates were the most frequently implicated drug, either alone or in combination, comprising 47% (101/216) of the drug caused

[1] When the term "opiate" is used in this section, the drug detected by analysis is usually morphine, the source of which is either pharmaceutical morphine or, much more likely, heroin.

deaths. This is a marked increase compared to the 64 opiate deaths in 2001 but more in line with the 105 opiate deaths in 2000 and with the 134 opiate deaths in 1999.

Cocaine, either alone or in combination with other drugs, was implicated in 38% (82/216) of the 2002 drug caused deaths. These 82 cocaine deaths compare with 46 deaths in 2001, 93 in 2000, 73 in 1999, and 70 in 1998.

Of the combined drug intoxications involving either cocaine or opiates, 57 involved both cocaine and opiates (and possibly other drugs). Use of opiates and cocaine predominated in accidental and undetermined drug caused deaths.

Ethanol (alcohol) is also a drug to be critically examined for its contribution to the circumstances surrounding death. In 2002, three accidental deaths were attributed to acute ethanol intoxication where ethanol was the single substance used. There were 53 deaths where ethanol, in combination with other drugs, was the cause of death. Blood alcohol (ethanol) tests were performed in 72% (731/1020) of non-natural deaths. Blood alcohol tests are only performed when death occurs within 24 hours of the initial injury/event. Positive blood alcohol levels were detected in 31% (223/731) of non-natural deaths where tests were performed.

Blood alcohol tests are performed on most persons who die within 24 hours of the incident. It should be noted that in many cases of traffic and homicide deaths, persons responsible for the death other than the decedent were under the influence of alcohol. The blood alcohol data is presented to show the levels of alcohol among those that died, but does not reflect the presence of alcohol among all parties involved.

Table 9-1 Blood Alcohol Testing and Manner of Death

Test Results	ACCIDENT	TRAFFIC	HOMICIDE	NATURAL	SUICIDE	UNDETER-MINED	TOTAL
Tested	291	130	79	369	186	45	1100
positive	*85*	*45*	*30*	*81*	*53*	*10*	*304*
negative	*206*	*85*	*49*	*288*	*133*	*35*	*796*
Not tested	181	73	13	294	14	8	583
Total	**472**	**203**	**92**	**663**	**200**	**53**	**1683**

Table 9-2 Blood Alcohol Testing as a Percentage by Manner

Test Results	ACCIDENT	TRAFFIC	HOMICIDE	NATURAL	SUICIDE	UNDETER-MINED	TOTAL
Tested	62%	64%	86%	56%	93%	85%	65%
positive	*29%*	*35%*	*38%*	*22%*	*28%*	*22%*	*28%*
negative	*71%*	*65%*	*62%*	*78%*	*72%*	*78%*	*72%*
Not tested	38%	36%	14%	44%	7%	15%	35%

TABLE 9-3 2002 Drugs & Poison Caused Deaths

Drug Name	Total Deaths Out Of 1683 Cases In Which Drug Was Present [1]	Overdose Deaths (216)			Overdose Death [5]		
		In Which Drug Was Present [2]	In Which Single Drug Was Present [3]	In Which Multiple Drugs Were Present [4]	Accident	Suicide	Undetermined
Acetaminophen	36	17	4	13	11	4	2
Alcohol/Ethanol	318	56	3	53	47	2	7
Alprazolam	10	7	0	7	4	1	2
Amitriptyline	29	16	2	14	10	3	3
Bupivicaine	9	1	0	1	1	0	0
Bupropion	10	7	0	7	4	2	1
Butalbital	3	2	0	2	1	1	0
Cannabinoids/THC [6]	132	24	0	24	21	3	0
Cisatracurium	1	1	1	0	0	0	1
Carbamazepine	6	2	0	2	2	0	0
Carbon Monoxide [7]	26	17	17	0	0	17	0
Chlordiazepoxide	10	6	0	6	6	0	0
Citalopram	27	8	0	8	4	2	2
Clozapine	5	1	0	1	1	0	0
Cocaine [8]	170	82	17	65	77	1	4
Cochichine	1	1	1	0	1	0	0
Codeine [9]	66	53	0	53	50	1	2
Cyanide	2	2	2	0	0	2	0
Cyclobenzaprine	9	4	0	4	1	2	1
Desipramine	5	1	0	1	0	1	0
Diazepam	77	33	0	33	22	5	6
Digoxin	2	1	0	1	0	1	0
Diltiazem	7	2	0	2	1	1	0
Diphenhydramine	53	24	0	24	15	6	3
Doxepin	10	8	0	8	8	0	0
Fentanyl	9	6	0	6	4	0	2
Fluoxetine	10	9	0	9	6	3	0
Gabapentin	8	5	0	5	3	1	1
GHB	5	5	1	4	3	0	2
Hydrocodone	24	9	0	9	8	1	0
Hydroxyzine	3	3	0	3	2	0	1
Imiprimine	5	3	0	3	0	3	0
Insulin	1	1	1	0	0	1	0
Isopropanol	24	1	0	1	0	1	0
Ketamine	1	0	0	0	0	0	0
Lamotrigene	7	3	0	3	2	1	0

Footnotes for TABLE 9-3

1. This column includes all ME jurisdiction cases in which the specific drug or poison was detected in quantifiable levels in the decedent, regardless of cause and manner of death.

2. This column represents deaths due to drug/poison in which the specific drug (or poison) was present and includes drug/poison deaths due to both single and multiple drug overdoses.

3. This column represents deaths due to a single drug or poison.

4. This column represents overdose deaths caused by two or more agents in which the specific drug or poison was detected.

5. These columns show the manner of death in drug/poison overdose deaths in which the specific agent was detected.

6. Cannabinoids are listed if they were found at any level in blood or urine, not necessarily in quantified levels. Cannabinoids are not considered potentially lethal agents and, therefore, there are no instances of single drug overdose deaths involving cannabinoids or THC. Although cannabinoids/THC were not considered contributory to death, they were detected in overdose deaths as listed.

7. Carbon monoxide fatalities are listed if the level of carboxyhemoglobin was 10% or greater. Suicides due to intentional inhalation of carbon monoxide accounted for 17 deaths. In these 17, other drugs may have been present, but they did not contribute to the death. Other sources of carbon monoxide besides intentional inhalation involved fire fatalities.

8. Includes Benzoylecgonine.

9. In five (5) overdose deaths involving codeine, the source of the drug was known to be pharmaceutical codeine. In the remaining 48 overdose deaths involving codeine, the source of the drug was likely small quantities of codeine present in heroin used by illicit drug users.

10. In only one of the overdose deaths involving morphine, the source of the drug was known to be pharmaceutical grade. In the remaining 87 overdose deaths involving morphine, the source of the drug was likely the morphine derived from heroin preparations used by illicit drug users.

11. Monoacetylmorphine (MAM) is the first breakdown product of heroin, otherwise known as diacetylmorphine. The presence of MAM, therefore, proves the source of opiate to be heroin. However, the absence of MAM does not imply that the source of opiate was not heroin.

12. In five (5) of the 32 total cases, nortriptyline was present without the presence of amitriptyline, indicating that the source of the drug was in fact nortriptyline. In the other twenty-seven (27) cases, amitriptyline was also present, indicating that the nortriptyline was present due to the breakdown of amitriptyline. Only one case out of the five nortriptyline deaths was an overdose, which was classified as an accident.

TABLE 9-3 (Con't) **2002 Drugs & Poison Caused Deaths**

Drug Name	Total Deaths Out of 1683 Cases In Which Drug Was Present [1]	Overdose Deaths (216)			Overdose Death [5]		
		In Which Drug Was Present [2]	In Which Single Drug Was Present [3]	In Which Multiple Drugs Were Present [4]	Accident	Suicide	Undetermined
Meprobamate	11	7	0	7	6	0	1
Methadone	55	36	3	33	32	1	3
Methamphetamine	30	13	4	9	12	0	1
Methanol	2	0	0	0	0	0	0
Methylphenidate	1	1	0	1	0	0	1
Metoprolol	4	1	0	1	0	1	0
Mirtazepine	9	5	0	5	3	1	1
Morphine [10]	149	88	20	68	81	0	7
Monoacetylmorphine [11]	37	35	0	35	35	0	0
Nortriptyline [12]	32	19	0	19	13	3	3
Olanzapine	7	4	0	4	3	1	0
Oxycodone	46	23	2	21	17	5	1
Paroxetine	10	9	0	9	5	2	2
Pentobarbital	3	1	0	1	0	1	0
Phencyclidine	5	1	0	1	1	0	0
Phenobarbital	6	0	0	0	0	0	0
Phenytoin	20	3	0	3	2	1	0
Promethazine	22	12	0	12	12	0	0
Propoxyphene	7	3	0	3	2	0	1
Pseudoephedrine	10	2	0	2	0	0	2
Quetiapine	5	3	0	3	3	0	0
Risperidone	1	0	0	0	0	0	0
Salicylates	6	2	1	1	0	0	2
Sertraline	18	7	0	7	6	1	0
Sufentanil	1	1	0	1	1	0	0
Temazepam	4	2	0	2	2	0	0
Thioridazine	2	0	0	0	0	0	0
Tramadol	8	2	0	2	2	0	0
Trazodone	28	12	0	12	9	2	1
Venlafaxine	19	8	0	8	5	2	1
Verapamil	1	0	0	0	0	0	0
Zolpidem	9	4	0	4	2	2	0

Graph 9-1 Deaths Caused by Drug/Poison 1993-2002

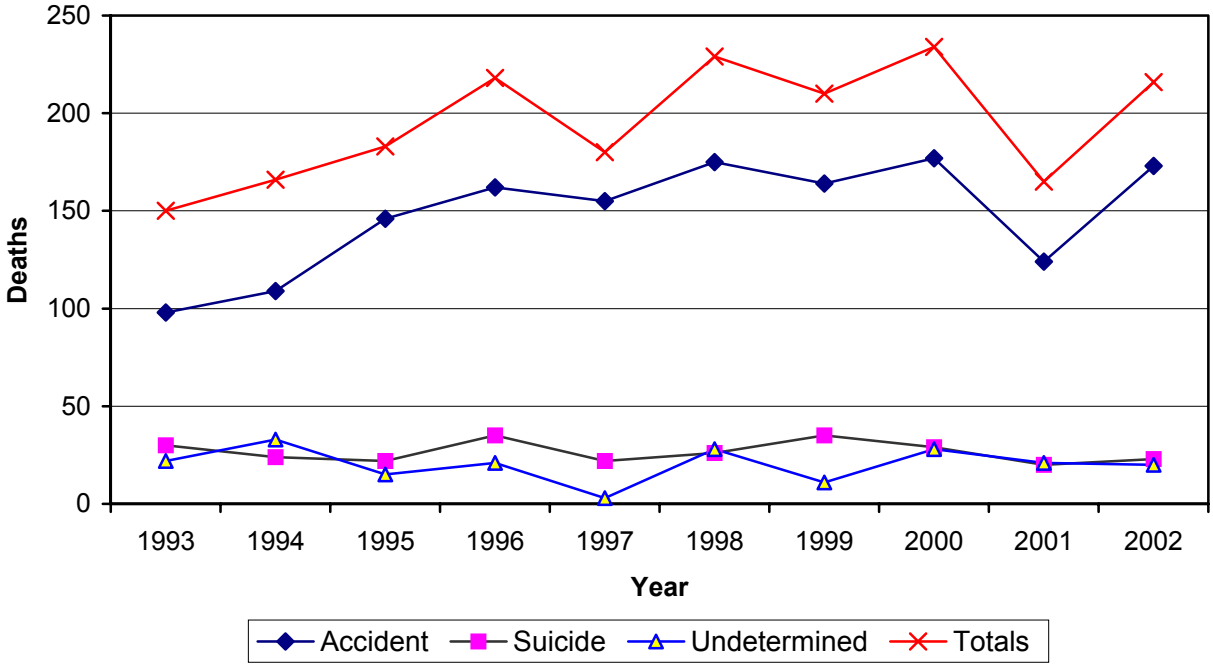

Table 9-4

Drug Caused Deaths Involving Cocaine, Opiates, and Ethanol: 1995-2002

DRUG COMBINATIONS FOUND	YEAR OF DEATH							
	1995	1996	1997	1998	1999	2000	2001	2002
Cocaine alone	6	14	7	7	11	30	8	17
Cocaine and opiates	28	28	17	14	29	18	13	19
Cocaine, opiates, and others [1]	27	20	26	40	28	34	15	38
Cocaine, others without opiates [1]	6	10	12	9	3	11	10	8
Opiates alone	32	30	26	31	34	18	20	21
Opiates, others without cocaine [1]	45	56	43	64	43	35	16	23
Subtotal, cocaine or opiate involved	144	158	131	165	148	146	82	126
Percentage, cocaine or opiate involved	79%	72%	72%	71%	70%	62%	50%	58%
Subtotal, cocaine involved	67	72	62	70	71	93	46	82
Percentage, cocaine involved	37%	33%	34%	30%	34%	40%	28%	38%
Subtotal, opiate involved	132	134	112	149	134	105	64	101
Percentage, opiates involved	72%	61%	62%	64%	64%	45%	39%	47%
Rx Opiate(s) involved [1]	N/A	N/A	N/A	N/A	N/A	N/A	51	64
Percentage, Rx Opiate(s) Involved	N/A	N/A	N/A	N/A	N/A	N/A	31%	30%
Ethanol/Alcohol involved [2]	N/A	N/A	N/A	106	60	81	37	56
Percent, Ethanol/Alcohol involved	N/A	N/A	N/A	45%	29%	35%	22%	26%
All Drug-Caused Deaths	183	218	181	234	210	234	165	216
All Deaths Under KCME Jurisdiction	**1504**	**1558**	**1491**	**1507**	**1472**	**1506**	**1578**	**1683**

[1] Note: Prescription Opiate involvement may be included in "Other" categories.

[2] Note: Ethanol/Alcohol involvement may be included in "Other" categories.

Graph 9-2 **Cocaine and Opiate Caused Deaths Compared with All Drug Deaths: 1995-2002**

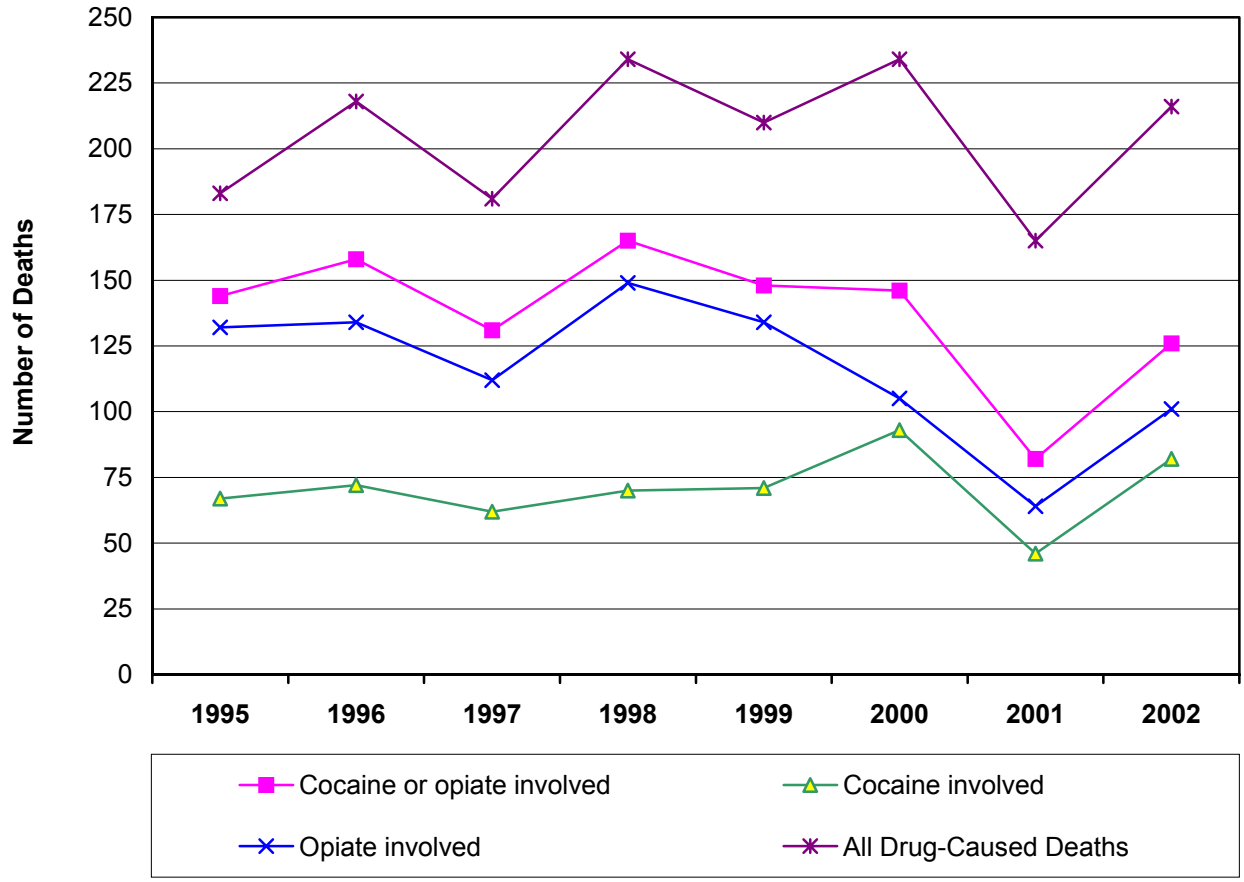

Table 9-5 Drug and Poison Deaths and Age Group of the Decedent

AGE GROUP (YEARS)	MANNER OF DEATH			SUB TOTAL	TOTAL
	ACCIDENT	SUICIDE	UNDETERMINED		
<20	3	0	0		3
Male	*1*	*0*	*0*	*1*	
Female	*2*	*0*	*0*	*2*	
20-29	19	3	3		25
Male	*15*	*2*	*1*	*18*	
Female	*4*	*1*	*2*	*7*	
30-39	52	4	8		64
Male	*41*	*2*	*4*	*47*	
Female	*11*	*2*	*4*	*17*	
40-49	63	4	5		72
Male	*45*	*0*	*2*	*47*	
Female	*18*	*4*	*3*	*25*	
50-59	34	5	3		42
Male	*21*	*3*	*1*	*25*	
Female	*13*	*2*	*2*	*17*	
60-69	0	3	1		4
Male	*0*	*1*	*1*	*2*	
Female	*0*	*2*	*0*	*2*	
70-79	1	3	0		4
Male	*1*	*2*	*0*	*3*	
Female	*0*	*1*	*0*	*1*	
80-89	1	1	0		2
Male	*0*	*0*	*0*	*0*	
Female	*1*	*1*	*0*	*2*	
90+	0	0	0		0
Male	*0*	*0*	*0*	*0*	
Female	*0*	*0*	*0*	*0*	
Total	**173**	**23**	**20**		**216**

Graph 9-3 Drug and Poison Deaths and Age Group of the Decedent